



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/659,388

09/11/2003

Kyung Chan Park

1740-000057/US

3783

30593

7590

03/20/2008

HARNESS, DICKEY & PIERCE, P.L.C.

P.O. BOX 8910

RESTON, VA 20195

EXAMINER

ALUNKAL, THOMAS D

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

03/20/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/659,388	<b>Applicant(s)</b> PARK, KYUNG CHAN	
	<b>Examiner</b> THOMAS D. ALUNKAL	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 12/5/07, with respect to the rejection(s) of claim(s) 1-8 and 10-16 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (hereafter Nakajima)(US PgPub 2002/0001274) and Okumura et al. (hereafter Okumura)(US 6,584,050) and further in view of Nakajima et al. (US PgPub 2001/0036134).

Regarding claim 1, Nakajima discloses a high density read-only optical disc including a lead-in area, a data area, and a lead-out area, comprising (Figure 6, read-only optical disc): the lead-in area including a specific area having a straight pit-shaped line created by repeated marks and spaces (Figure 1, Element 3, straight pit string). Nakajima does not specifically disclose that either one of the mark or the space is recorded with a minimum pit length at least as small as 2T. Rather, Nakajima discloses a pit string with pits of equal lengths (Figure 1A). In the same field of endeavor,

Okumura discloses an optical recording medium (Figure 2), which has a straight-pit shaped line created by repetition of marks and spaces with lengths equal to  $2T$  (Figure 3a). Nakajima discloses that the mark/space pattern of Figure 3a is used as a phase-adjusting pattern in the inner periphery of the optical disc (Column 8, lines -1-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the  $2T$  mark/space pattern of Okumura to the optical disc of Nakajima, motivation being to extract a clock signal having stable and optimal phases which is a result of reproducing the phase-adjusting pattern (Column 8, lines 60-64 of Okumura).

Furthermore, Nakajima also does not specifically disclose a tracking servo operation that can be successively performed over the whole data area of the disc. The combination of Nakajima and Okumura disclose the same pit structure (constant pit length in the lead-in area) as claimed. In the same field of endeavor, Nakajima et al. discloses an optical disc with a pit string provided in the lead-in area of the disc, in which a tracking servo signal is constant over the entire disc (Figure 8A and Paragraph 0147).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the tracking servo means of Nakajima et al. to the recording/reproducing device of Nakajima, motivation being to provide a signal tracking servo operation over the entire disc without the need for separate tracking servo operations in different regions of the disc. A single tracking servo operation over the entire disc results in a reduced tracking time.

Regarding claim 2, Nakajima discloses wherein the specific area contains principal information of the high-density read-only optical disc (Paragraph 0006).

Regarding claim 3, Nakajima discloses wherein the specific area is an area that would correspond in a high-density rewritable optical disc to a PIC (Permanent Information & Control data) area, for permanently storing principal disc information (Paragraph 0006).

Regarding claim 5, Okumura discloses wherein the mark and the space are repeatedly recorded in a predetermined recording period with different unique pit lengths according to a data value representing the recording period (Figures 3a and 3b).

Regarding claim 6, Okumura discloses wherein the sum of pit lengths of each pair of the mark and the space is constant, irrespective of a representative data value of the recording period (Figures 3a and 3b, straight pit strings with equal periods).

Claims 4, 7-8, and 10-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (hereafter Nakajima)(US PgPub 2002/0001274) and Okumura et al. (hereafter Okumura)(US 6,584,050) and in view of Nakajima et al. (US PgPub 2001/0036134), as applied to claims 1-3 and 5-6 above, and further in view of Applicants Admitted Prior Art (AAPA).

Regarding claim 4, Nakajima discloses wherein the optical disc is a read-only optical disc (Paragraph 0085). Nakajima does not disclose wherein the high-density read-only optical disc is a BD-ROM and the high density rewritable optical disc is a BD-

RE. However, applicant's admitted prior art discloses a BD-ROM (Paragraph 0011) and a BD-RE (Paragraph 0005).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the data format of Nakajima to a BD-ROM disc, motivation being to increase the storage capacity of the read-only optical disc.

Regarding method claim 7, this claim recites limitations substantially similar to limitations in claim 1. These limitations are rejected for the same reasons as provided above. In addition, claim 7 recites forming pre-pits associated with a bi-phased HFM (High Frequency Modulated) groove. Nakajima, Okumura, and Nakajima et al. do not disclose this limitation. However, AAPA discloses forming pre-pits associated with a bi-phased HFM (High Frequency Modulated) groove (Figure 2).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the modulation method of AAPA to the optical recording medium of Nakajima, motivation being to efficiently record data to the lead-in area of the disc.

Regarding claim 8, Nakajima discloses wherein the pre-pits are arranged in the form of a straight line (Figure 1A, Element 3, straight pit string).

Regarding claim 10, Nakajima discloses wherein the servo operation is a DPD (Differential Phase Detection) method (Figure 2, Elements 6,7,9,10, and 11 and Paragraph 0043).

Regarding method claims 11 and 12, these recording method claims correspond to reproducing method claims 7 and 8 and are rejected over the same grounds.

Regarding claim 13, this claim recites limitations similar to limitations in claim 1. These limitations are rejected for the same reasons as provided above. In addition, claim 13 recites forming pre-pits associated with a bi-phased HFM (High Frequency Modulated) groove. Nakajima, Okumura, and Nakajima et al. do not disclose this limitation. However, AAPA discloses forming pre-pits associated with a bi-phased HFM (High Frequency Modulated) groove (Figure 2).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the modulation method of AAPA to the optical recording medium of Nakajima, motivation being to efficiently record data to the lead-in area of the disc.

Regarding claim 14, Nakajima discloses wherein the pre-pits recorded in the lead-in area are arranged in the form of a straight line (Figure 1A, Element 3, straight pit string).

Regarding claim 15, Nakajima discloses wherein the pre-pits recorded in the lead-in area contain predetermined marks and spaces, and either one of the mark or the space is configured with a minimum pit length (Figure 1A, Element 3, straight pit string with constant minimum pit lengths).

Apparatus claim 16 is drawn to the apparatus corresponding to the method of using the same as claimed in claim 7. Therefore apparatus claim 16 corresponds to method claim 7, and is rejected for the same reasons of obviousness as used above.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Karakawa et al. (US PgPub 2002/0054555) discloses an information storage apparatus and information reproducing method. Yamada (US 5,737,284) discloses an optical disc drive having accessing from a current position within a lead-in area. Schell et al. (US 6,243,336) disclose an optical disc system having a servo motor and servo error detection assembly. Horie et al. (US 5,862,123) disclose an optical phase-change disc. Horimai et al. (US 6,128,272) disclose a high-density recording medium. Gotoh et al. (US 6,125,181) disclose a recording method wherein a piracy prevention barcode is encrypted in the disk's management area.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS D. ALUNKAL whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas D Alunkal/  
Examiner, Art Unit 2627

/Wayne R. Young/  
Supervisory Patent Examiner, Art Unit 2627



Application/Control Number: 10/659,388  
Art Unit: 2627

Page 8